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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,061	07/18/2003	Stephan Gehring	30287-93	3982
44279	7590	09/17/2007		
PULSE-LINK, INC. 1969 KELLOGG AVENUE CARLSBAD, CA 92008			EXAMINER SHAH, CHIRAG G	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 09/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/623,061

Applicant(s)

GEHRING ET AL.

Examiner

Chirag G. Shah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/25/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 17-28 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 8, 5-7, 11-12, 17 and 20 respectively of copending Application No. 09/480,837. Although the conflicting claims are not identical, they are not patentably distinct from each other because Applicants claim 1 merely broadens the scope of patent application number 09/480,837 by eliminating "ultra wide band network" and "ultra wide band pulses". It has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184 (CCPA). Also note *Ex Parte Raine*, 168 USPQ 3.75 (bd. APP. 1969) ; omission of a reference element whose function is not needed would have been obvious to one skilled in the art.

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The comparison of two applications

Regarding claims 17 [similar to claim 1 respectively of copending Application No. 09/480,837, except broader disjointing the TDMA/MAC and ultra wide band pulses].

Regarding claim 18-28 and 36 [similar to claims 2-4, 8, 5-7, 11-12, 17, 20 and 17 respectively of copending Application No. 09/480,837].

3. Claims 17-21 and 27-29 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12-16 and 17-19 respectively of copending Application No. 10/611,199. Although the conflicting claims are not identical, they are not patentably distinct from each other because Applicants claim 1 merely broadens the scope of patent application number 10/611,199 by eliminating “ultra wide band network” and “ultra wide band pulses”. It has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. In re Karlson, 136 USPQ 184 (CCPA). Also note Ex Parte Raine, 168 USPQ 3.75 (bd. APP. 1969) ; omission of a reference element whose function is not needed would have been obvious to one skilled in the art.

The comparison of two applications:

Regarding claim 17[similar to claim 12 of copending Application No. 10/611,199, except broader by eliminating ultra wide band network” and “ultra wide band pulses” and narrower by adding “timestamp slot” and “synchronization slot”].

Regarding claim 2, [identical to claim 13 of copending Application No. 10/611,199].

Regarding claim 3, [identical to claim 14 of copending Application No. 10/611,199].

Regarding claims 4 and 13, [identical to claim 15 of copending Application No. 10/611,199].

Regarding claim 8, [identical to claim 16 of copending Application No. 10/611,199].

Regarding claims 27 and 36, [identical to claim 17 of copending Application No. 10/611,199].

Regarding claim 28, [identical to claim 18 of copending Application No. 10/611,199].

Regarding claim 29, [identical to claim 19 of copending Application No. 10/611,199].

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 29, 38 and 41 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Regarding claim 19, Under the Interim Guideline for Examination of Patent Applications for Patent Subject Matter Eligibility, the claims seek for patent protection of a signal. Moreover, it does not appear that claims reciting a plurality of ultra wide band pulses encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101. In addition, according to ANNEX IV-Computer Readable Nonstatutory Subject Matter section of the Interim Guideline for Examination of Patent Applications for Patent Subject Matter Eligibility, the computer program is not embodied or encoded on a computer read-able medium.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 30 and 38-41 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The amended specification and the existing specification does not enable one skilled in the art to make and/or use the invention of an ultra wide band network using a TDMA frame format. How does ultra wide band network having master and plurality of slave device enable TDMA? In other words, the specification does not describe in such a way to enable how the ultra wide band network implements the TDMA.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 17-20, 22-26, 28-34, and 37-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Aiello et al. (U.S. Patent No. 6,275,544) in view of Hulyalkar (U.S. Patent No. 6,347,084).

Regarding claims 17, 28 and 37, Aiello discloses in **fig. 1 and col. 7, lines 47-67** of (an ultra wide band network) network, comprising:

a master device [**device 12a, fig. 1 and col. 5, lines 45-61**];

a plurality of slave devices [**12b and 12c, see fig. 1 and col. 5, lines 45-61**] structured to communicate with the master device using a plurality of ultra wide band pulses [**the master transceiver performs data transmission between several node devices via a MAC protocol utilizing a TDMA frame definition. Under the TDMA architecture, the data transmitted as short RF pulses divided into discrete data frames; see col. 7, lines 47-67**]; and

a medium access control protocol comprising: a Time Division Multiple Access frame definition [**see fig. 3 and col. 7, lines 47-55**] having a start-of-frame section [**SOF, see col. 7, lines 65-67**], a command section [**command slot 42, see fig. 3**], a data slot section containing a plurality of variable length slots. [**see col. 8, lines 45-59 and fig. 3**], a synchronization slot [**master sync code 46, see col. 8, lines 1-21 and fig. 3**].

Aiello fails to disclose of a TDMA frame including a timestamp slot. Hulyalkar teaches a method of timestamp synchronization that includes a control node (master device) and a plurality of other nodes (slave devices) that are in communication with one another mediated by a MAC subsystem that uses a reservation-based TDMA protocol. Hulyalkar discloses in col. 5, lines 5-17 and col. 9, lines 41-65 and respective portion of the specification to include a control node sending a preset command to slave nodes and it presets their respective timestamp to the prescribed timestamp value. Thus, having a timeslot within a TDMA frame. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to incorporate the teachings of a timestamp timeslot within a TDMA frame as taught by Hulyalkar into Aiello

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invention. One is motivated as such in order to enable permit precise, deterministic scheduling with reduction in delay and processing time for a reservation-based TDMA protocol.

Note: Claim 17 is claimed in a disjoint manner. The MAC protocol is not tied or linked with the communication between the master and slave devices using plurality of ultra wide band pulses.

Regarding claims 29, 38 and 41, Aiello discloses a method for scheduling the assignment of variable length data [see col. 8, lines 45-59 and fig. 3] slots in network comprising the steps of:

means for providing a master device [device 12a , fig. 1 and col. 5, lines 45-61],

means for providing a plurality of slave devices [12b and 12c, see fig. 1 and col. 5, lines 45-61] in network communication with the master device (using a plurality of ultra wide band pulses) [the master transceiver performs data transmission between several node devices via a MAC protocol utilizing a TDMA frame definition. Under the TDMA architecture, the data transmitted as short RF pulses divided into discrete data frames; see col. 7, lines 47-67];

a computer program product comprising a MAC [see col. 7, lines 47-67] comprising:

a Time Division Multiple Access frame definition [see fig. 3 and col. 7, lines 47-55] having a start-of-frame section [SOF, see col. 7, lines 65-67], a command section [command slot 42, see fig. 3], a data slot section containing a plurality of variable length slots [see col. 8, lines 45-59 and fig. 3], a synchronization slot [master sync code 46, see col. 8, lines 1-21 and fig. 3]; and

determining a schedule time to communicate the assignment and reallocation of said variable-length data slots to each of said slave devices [Aiello discloses in col. 7, lines 47-67 and in col. 8, lines 45-60, wherein the MAC layer protocol is configured to implement dynamic requisition, allocation, and reallocation of variable length data slots within the frame and further discloses in figs. 1, 3, col. 5, lines 62-67 and col. 8, lines 45-59, wherein said master device and slave device are further configured to coordinate a scheduled switch from a first set of data slot parameters to second set of data slot parameters].

Aiello fails to disclose of a TDMA frame including a timestamp slot. Hulyalkar teaches a method of timestamp synchronization that includes a control node (master device) and a plurality of other nodes (slave devices) that are in communication with one another mediated by a MAC subsystem that uses a reservation-based TDMA protocol. Hulyalkar discloses in col. 5, lines 5-17 and col. 9, lines 41-65 and respective portion of the specification to include a control node sending a preset command to slave nodes and it presets their respective timestamp to the prescribed timestamp value. Thus, having a timeslot within a TDMA frame. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to incorporate the teachings of a timestamp timeslot within a TDMA frame as taught by Hulyalkar into Aiello invention. One is motivated as such in order to enable permit precise, deterministic scheduling with reduction in delay and processing time for a reservation-based TDMA protocol.

Note: Claims 29, 38 and 41 are claimed in a disjoint manner. The MAC protocol is not tied or linked with the communication between the master and slave devices using plurality of ultra wide band pulses.

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Regarding claims 18-20 and 39-40, Aiello discloses in col. 7, lines 47-67 and in col. 8, lines 45-60 wherein the MAC layer protocol is configured to implement dynamic requisition, allocation, and reallocation of variable length data slots within the frame.

Regarding claims 22, 26, 30 and 34, Aiello discloses in figs. 1, 3, col. 5, lines 62-67 and col. 8, lines 45-59, wherein said master device and slave device are further configured to coordinate a scheduled switch from a first set of data slot parameters to second set of data slot parameters as claim.

Regarding claims 23 and 31, Aiello fails to disclose further wherein the timestamp slot further comprises a bit-field which is incremented by a master timestamp counter. Hulyalkar discloses in claims 7 and 11 and respective portions of the specification of comparing timestamp counter value in each nodes (slave). Hulyalkar also disclose a timestamp register and counter that includes a bit-field for incrementing. Hulyalkar further discloses in the above disclosed sections that includes comparator that compares the timestamp values stored and coordinates switch from a first set of data slot to a second set of data slot at different times. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings at the time of the invention to include the teachings of Hulyalkar in order to precisely determine timing for the entire system and execute transmission with minimal delay or packet loss.

Regarding claims 24-25, 32-33 Aiello fails to disclose wherein each of said slave devices is configured to maintain a local copy of said master timestamp counter. Hulyalkar discloses in

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claims 7 and 11 and respective portions of the specification of comparing timestamp counter value in each nodes (slave), thus suggesting each of the slave devices is configured to maintain a copy of the master counter. Hulyalkar also disclose a timestamp register and counter that includes a bit-field for incrementing. Hulyalkar further discloses in the above disclosed sections that includes comparator that compares the timestamp values stored and coordinates switch from a first set of data slot to a second set of data slot at different times. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings at the time of the invention to include the teachings of Hulyalkar in order to precisely determine timing for the entire system and execute transmission with minimal delay or packet loss.

7. Claim 21 and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Aiello et al. (U.S. Patent No. 6,275,544) in view of Hulyalkar (U.S. Patent No. 6,347,084) as applied above, and further in view of Kadambi et al. (U.S. Patent No. 6,560,229), hereinafter Kadambi.

Regarding claims 21 and 35, Aiello in view of Hulyalkar fails to disclose wherein said variable-length data slots of said frame have a granularity of one bit. Kadambi discloses col. 8, lines 50 to col. 9, lines 6 that the MAC layer protocol as recited, wherein variable length data slots of frame have a granularity of one bit as claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Aiello in view of Hulyalkar to include the teaching of Kadambi in order to provide a reservation scheme for data traffic and a random access technique for control and signaling traffic.

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Claim 21 and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Aiello et al. (U.S. Patent No. 6,275,544) in view of Hulyalkar (U.S. Patent No. 6,347,084) as applied above, and further in view of Kadambi et al. (U.S. Patent No. 6,560,229), hereinafter Kadambi.

Response to Arguments

8. Applicant's arguments with respect to preliminary amendment of claims 17-41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patel Jay can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

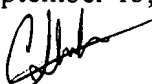
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September 13, 2007



Chirag Shah

Primary Examiner, 2616

CHIRAG G. SHAH
PRIMARY PATENT EXAMINER

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